

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Canceled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (canceled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 3, 16, 18, 20 and 22, AMEND claims 1, 4, 5, 11-13, 15, 17, 19 and 21 and ADD new claims 23 and 24 in accordance with the following:

1. (CURRENTLY AMENDED) A device for extracting useful information from news information and presenting the information to a user, comprising:

a news information division unit breaking down the news information in units of articles;
a useful article selection unit selecting useful articles from the broken-down articles; and
a news information re-editing unit collecting the selected articles, re-editing the articles in a form of news information suited to be presented to a user and outputting the re-edited articles,

wherein the useful article selection unit includes:

an article grouping unit classifying the broken-down articles into a plurality of groups based on similarity degree among the broken-down articles;

an article group selection unit selecting one or more groups from the plurality of the groups based on topicality degree for indicating degree of topicality of each of the groups; and

a typical article selection unit selecting one or more articles from articles belonging to each of the selected groups and designating the articles as typical articles of the group,

wherein the similarity degree among all combinations of two articles are calculated using keywords extracted from the two articles for all articles within a target time period designated by the user, and articles with high similarity degree are formed into one related article group,

wherein the topicality degree of each related article group is calculated based on a total number of articles and a number of information sources are calculated for each related article group,

wherein the related article group with the topicality degree exceeding a predetermined threshold value is selected as a key related article group, and

wherein the typical article is selected for each selected key related article group belonging to the key related article group based on a requirement set by the user.

2. (ORIGINAL) The device according to claim 1, wherein said news information division unit detects article portions included in the news information by analyzing a document format of the news information and breaks down the article portions in units of articles.

3. (CANCELED)

4. (ORIGINAL) The device according to claim 31, wherein said article group selection unit calculates the topicality degree based on both total number of articles belonging to the group and total number of information sources of articles belonging to the group.

5. (ORIGINAL) The device according to claim 31, further comprising a user instruction input unit inputting the user's instructions on news information presenting,

wherein said typical article selection unit selects one or more articles from articles belonging to each of the groups selected by the article group selection unit according to the instructions inputted to the user instruction input unit.

6. (ORIGINAL) The device according to claim 5, wherein said typical article selection unit selects one or more articles from articles belonging to each of the groups selected by the article group selection unit according to the instruction on distribution date of news information including the articles.

7. (ORIGINAL) The device according to claim 31, wherein said news information re-editing unit outputs typical articles selected from the groups in an order corresponding to topicality degree of a group selected by the said article group selection unit.

8. (ORIGINAL) The device according to claim 31, wherein said news information re-editing unit outputs the typical articles in an order corresponding to distribution date of news information including articles that are selected from groups selected by said article group selection unit.

9. (ORIGINAL) The device according to claim 7, wherein said news information re-editing unit outputs typical articles selected from groups selected by said article group selection unit and also outputs other typical articles selected from the groups as related articles.

10. (ORIGINAL) The device according to claim 8, wherein said news information re-editing unit outputs typical articles that are selected from groups selected by said article group selection unit and also outputs other typical articles selected from the groups as related articles.

11. (ORIGINAL) The device according to claim 3_1, wherein said news information re-editing unit outputs simplified typical articles obtained by omitting a part of contents of typical articles that are selected from the groups selected by said article group selection unit and sets up hyperlinks for indicating the location of the typical articles in the simplified typical articles.

12. (ORIGINAL) The device according to claim 3_1, wherein said news information re-editing unit outputs typical articles that are selected from the groups selected by said article group selection unit and also outputs graphics included in the typical articles.

13. (ORIGINAL) The device according to claim 3_1, wherein said news information re-editing unit converts contents of typical articles that are selected from the groups selected by said article group selection unit into a form suited for loud reading and outputs the converted contents.

14. (ORIGINAL) The device according to claim 13, wherein said news information re-editing unit outputs only titles of typical articles that are selected from the groups selected by said article group selection unit.

15. (CURRENTLY AMENDED) A device for extracting useful information from news information and presenting the information to a user, comprising:

information division means for breaking down the news information in units of articles;

useful article selection means for selecting useful articles from the broken-down articles;

and

news information re-editing means for collecting the selected articles, and re-editing the articles in a form of news information suited to be presented to a user and outputting the re-edited articles,

wherein the useful article selection means includes:

article grouping means for classifying the broken-down articles into a plurality of groups based on similarity degree among the broken-down articles;

article group selection means for selecting one or more groups from the plurality of the groups based on topicality degree for indicating degree of topicality of each of the groups; and

typical article selection means for selecting one or more articles from articles belonging to each of the selected groups and designating the articles as typical articles of the group,

wherein the similarity degree among all combinations of two articles are calculated using keywords extracted from the two articles for all articles within a target time period designated by the user, and articles with high similarity degree are formed into one related article group,

wherein the topicality degree of each related article group is calculated based on a total number of articles and a number of information sources are calculated for each related article group,

wherein the related article group with the topicality degree exceeding a predetermined threshold value is selected as a key related article group, and

wherein the typical article is selected for each selected key related article group belonging to the key related article group based on a requirement set by the user.

16. (CANCELED)

17. (CURRENTLY AMENDED) A method for extracting useful information from news information and presenting the information to a user, comprising:

breaking down the news information in units of articles;

selecting useful articles from the broken-down articles; and

collecting the selected articles, and re-editing the articles in a form of news information suited to be presented to a user and outputting the reedited articles,

wherein the selecting includes:

classifying the broken-down articles into a plurality of groups based on similarity degree among the broken-down articles;

selecting one or more groups from the plurality of the groups based on topicality degree for indicating degree of topicality of each of the groups; and

selecting one or more articles from articles belonging to each of the selected groups and designating the articles as typical articles of the group,

wherein the similarity degree among all combinations of two articles are calculated using keywords extracted from the two articles for all articles within a target time period designated by the user, and articles with high similarity degree are formed into one related article group,

wherein the topicality degree of each related article group is calculated based on a total number of articles and a number of information sources are calculated for each related article group,

wherein the related article group with the topicality degree exceeding a predetermined threshold value is selected as a key related article group, and

wherein the typical article is selected for each selected key related article group belonging to the key related article group based on a requirement set by the user.

18. (CANCELED)

19. (CURRENTLY AMENDED) A computer-readable storage medium on which is recorded a program to direct a computer to extract useful information from news information and to present the extracted information to a user, said program directing the computer to execute ~~the processes of:~~

breaking down the news information in units of articles;
selecting useful articles from the broken-down articles; and
collecting the selected articles, re-editing the articles in a form of news information suited to be presented to a user and outputting the re-edited articles,

wherein the selecting includes:
classifying the broken-down articles into a plurality of groups based on similarity degree among the broken-down articles;

selecting one or more groups from the plurality of the groups based on topicality degree for indicating degree of topicality of each of the groups; and

selecting one or more articles from articles belonging to each of the selected groups and designating the articles as typical articles of the group,

wherein the similarity degree among all combinations of two articles are calculated using keywords extracted from the two articles for all articles within a target time period designated by the user, and articles with high similarity degree are formed into one related article group,

wherein the topicality degree of each related article group is calculated based on a total number of articles and a number of information sources are calculated for each related article group,

wherein the related article group with the topicality degree exceeding a predetermined threshold value is selected as a key related article group, and

wherein the typical article is selected for each selected key related article group belonging to the key related article group based on a requirement set by the user.

20. (CANCELED)

21. (CURRENTLY AMENDED) A computer data signal embodied in a carrier wave and representing a program to direct a computer to extract useful information from news information and to present the information to a user, said program directing the computer to execute ~~the~~ processes of:

breaking down the news information in units of articles;
selecting useful articles from the broken-down articles; and
collecting the broken-down articles, re-editing the articles in a form of news information suited to be presented to a user and outputting the reedited articles,

wherein the selecting includes:

classifying the broken-down articles into a plurality of groups based on similarity degree among the broken-down articles;

selecting one or more groups from the plurality of the groups based on topicality degree for indicating degree of topicality of each of the groups; and

selecting one or more articles from articles belonging to each of the selected groups and designating the articles as typical articles of the group.

wherein the similarity degree among all combinations of two articles are calculated using keywords extracted from the two articles for all articles within a target time period designated by the user, and articles with high similarity degree are formed into one related article group,

wherein the topicality degree of each related article group is calculated based on a total number of articles and a number of information sources are calculated for each related article group,

wherein the related article group with the topicality degree exceeding a predetermined threshold value is selected as a key related article group, and

wherein the typical article is selected for each selected key related article group belonging to the key related article group based on a requirement set by the user.

22. (CANCELED)

23. (NEW) A device for extracting useful information from news information and presenting the information to a user, comprising:

a news information division unit breaking down the news information in units of articles;
 a useful article selection unit selecting useful articles from the broken-down articles; and
 a news information re-editing unit collecting the selected articles, re-editing the articles in a form of news information suited to be presented to a user and outputting the re-edited articles, wherein the useful article selection unit includes:

an article grouping unit classifying the broken-down articles into a plurality of groups based on a similarity degree S among the broken-down articles;

an article group selection unit selecting one or more groups from the plurality of the groups based on a degree of topicality T of each of the groups; and

a typical article selection unit selecting one or more articles from articles belonging to each of the selected groups and designating the articles as typical articles of the group,

wherein the similarity degree S between two articles A_1 and A_2 is calculated according to:

$$S = \frac{\sum_{i,j} S_{ij}}{\min\{n(A_1), n(A_2)\}},$$

$$\text{wherein } S_{ij} = \frac{|W_{ij}|}{\min(|W_i|, |W_j|)},$$

wherein W_i and W_j are keywords extracted from the articles A_1 and A_2 , respectively,

wherein W_{ij} is a longest matching part character string in the extracted keywords W_i and W_j ,

wherein $|W_i|$, $|W_j|$ and $|W_{ij}|$ are lengths of the keywords W_i and W_j and the longest matching part character string W_{ij} , respectively, and

wherein $n(A_1)$ and $n(A_2)$ are the numbers of keywords extracted from the articles A_1 and A_2 , respectively.

24. (NEW) The device according to claim 23, wherein the degree of topicality T is calculated according to:

$$T = mn^2 \times \sqrt[n]{\prod_{i=1}^n \frac{m_i}{m}},$$

wherein m is a total number of articles belonging to a group, n is a number of information sources distributing the articles belonging to the group and m_i ($i=1, 2, \dots, m$) is a number of articles for each information source.